PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number Q77338	

	Application Number	Filed
Mail Stop AF Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	10/687,589	October 20, 2003
	First Named Inventor Byung-cheol SONG	
	Art Unit 2621	Examiner RAO, ANAND SHASHIKANT

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Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal

The review is requested for the reasons(s) stated on the attached sheet(s).
    Note: No more than five (5) pages may be provided.

☑ I am an attorney or agent of record.
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Signature

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February 20, 2007
Date

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	Docket No: Q77338
Byung-cheol SONG, et al.	
Appln. No.: 10/687,589	Group Art Unit: 2621
Confirmation No.: 2529	Examiner: RAO, ANAND SHASHIKANT
Filed: October 20, 2003	

For: METHOD AND APPARATUS FOR ENCODING VIDEO SIGNAL WITH VARIABLE BIT RATE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant is filing a Supplemental Amendment Under 37 C.F.R. § 1.116 concurrently with this filing in order to rewrite claim 3 in independent form to simplify issues for appeal. Pursuant to the new Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Final Office Action dated October 19, 2006 and the concurrently filed Supplemental Amendment Under 37 C.F.R. § 1.116, Applicant files this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

With the entry of the Supplemental Amendment Under 37 C.F.R. § 1.116 being filed concurrently with this paper, the status of the claims is that claim 3 is allowable, claims 1-2 and 4 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,570,922 to Wang, and claims 5-7 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Wang in view of U.S. Patent No. 6,959,042 to Liu.

Applicant turns now to the rejections at issue:

In order to reject a claim under 35 U.S.C. § 102 over a prior art reference, the prior art

reference must disclose every feature of the claim in as complete detail as recited in the claim.

See MPEP § 2131. In the instant case, Wang fails to disclose the feature of "comparing the

quantization parameter of the current frame calculated in (c) with a predetermined minimum

quantization parameter" as recited in claim 1.

At page 2, paragraph 4 of the October 19, 2006 Final Office Action, the Examiner argues

that this feature is disclosed by Wang at col. 29, lines 10-15. However, Applicant respectfully

disagrees with the Examiner's position.

At col. 29, lines 10-15, Wang makes a conclusory statement that "[i]t has been shown

that the target rates with correct and incorrect starting GOP parameters will converge within one

or two GOPs. The differences in target rates are within a fairly small margin." While this

passage discloses that the target rates will converge, it does not disclose the specifics of how the

target rates converge. Specifically, and importantly, this passage does not disclose comparing to

a minimum quantization parameter. Merely because Wang discloses that the quantization

parameters are "processed" (se page 2, paragraph 4 of FOA) does not disclose the claimed

feature because many types of processing are possible. Accordingly, Applicant respectfully

submits that Wang does not disclose every feature of claim 1, and thus the final rejection of

claim 1 under 35 U.S.C. § 102 is improper. The remaining claims are patentable based on their

respective dependencies, and accordingly the rejection of claims 2 and 4 is also improper.

With respect to claim 5, claim 5 recites the feature wherein "the predetermined minimum quantization parameter is determined to be the final quantization parameter if the quantization parameter of the current frame is smaller than the predetermined minimum quantization parameter, and the quantization parameter of the current frame is determined to be the final quantization parameter if the quantization parameter of the current frame is greater than the predetermined minimum quantization parameter." The Examiner acknowledges that Wang does not teach this feature, but cites Liu at col. 14, lines 45-67 as allegedly curing the deficiency. However, Applicant respectfully disagrees with the Examiner's position.

At these lines, Liu is discussing the uses of the complexity measure. The complexity measure may be summed over all macroblocks for a given video frame. Under constant bit rate operation, the complexity measure may be used to estimate the average quantization step size needed for a given bit-budget. Under variable bit rate operation, the complexity measure may be used to predict bits needed to encode a certain video frame to maintain quality. However, Applicant respectfully submits that this teaching of Liu does not relate to how the final quantization parameter is determined. More specifically, Liu does not teach or otherwise show that "the predetermined minimum quantization parameter is determined to be the final quantization parameter if the quantization parameter of the current frame is smaller than the predetermined minimum quantization parameter, and the quantization parameter of the current frame is determined to be the final quantization parameter if the quantization parameter of the current frame is greater than the predetermined minimum quantization parameter", as recited by

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claim 5. Accordingly, since Liu does not cure the deficiencies of Wang in this regard, the final

·rejection of claim 5 under 35 U.S.C. § 103(a) over Wang in view of Liu is also improper.

With regard to claim 6, claim 6 recites the feature of a movement estimation and

compensation unit which estimates a movement vector and a Sum of Absolute Difference (SAD)

using image data of an input current frame and image data of an immediately preceding frame

stored in the frame memory. The Examiner acknowledges that Wang does not disclose this

feature, but cites the teachings of Liu at Fig. 4, element 168 and col. 6, lines 4-15 as allegedly

curing this deficiency. However, Applicant respectfully disagrees with the Examiner's position.

In Fig. 4, Liu shows element 168 as a motion compensation. See col. 6, lines 9 and 17-19.

However, at col. 6, lines 9 and 17-19, Liu only generally describes the motion compensation 168

as using an "iterative process" to reconstruct frames using a framestore memory 170. Thus, at

this portion, Liu does not disclose calculating a movement vector or a Sum of Absolute

Difference (SAD). Applicant notes that at col. 6, lines 26-38, Liu does discuss a motion

estimation 186 element in the re-encoding section of Fig. 6. Moreover, Liu discusses generating

motion vectors on a frame by frame basis using a framestore memory 184. Liu also discusses

summing predicted picture with a next decoded picture and encoding the result. See col. 6, lines

31-34. However, Liu does not disclose or teach a Sum of the Absolute Difference (SAD).

Therefore, for these reasons, Applicant respectfully submits that claim 6 is patentable over the

Wang and Liu combination, and accordingly the § 103 final rejection of claim 6 over Wang and

Liu is improper.

With respect to claim 7, claim 7 recites features similar to claim 1 discussed above. Liu

does not cure the deficiencies of Wang, and accordingly, Applicant respectfully submits that the

final rejection of claim 7 under 35 U.S.C. § 103(a) over Wang in view of Liu is improper.

Accordingly, Applicant respectfully submits that the final rejection of claims 1-2, and 4-7

is improper for the above reasons, and thus the final rejection should be withdrawn and the

claims allowed.

Respectfully submitted,
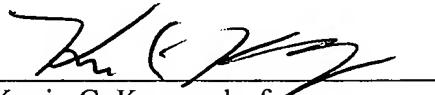
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